

THIRTEENTH ANNUAL REPORT

of the

STATE MINE INSPECTOR

of the

State of Arkansas

FOR THE YEAR ENDING
JUNE 30, 1906

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LETTER OF TRANSMITTAL.

To the Honorable Jefferson Davis:

SIR—I have the honor to submit to you herewith the annual report of Hon. Martin Rafter, State Mine Inspector, for the year ending June 30, 1906. In it will be found tabulated statements giving number of mines and miners and other employees, also the amount paid the same, the number of tons of coal produced, the number of fatal accidents, number of new mines, and all improvements made in the State, and other information he deemed of importance.

Respectfully,

GUY B. TUCKER,

Commissioner of Mines, Manufactures and Agriculture.

THIRTEENTH ANNUAL REPORT
of the
Mine Inspector of the State of Arkansas
for the
Year Ending June 30, 1906.

There are six coal producing counties in the State, viz: Johnson, Pope, Logan, Sebastian, Scott, and Franklin.

They are located in the northwestern part of the State. The counties producing the largest amount of coal are Johnson, Franklin, and Sebastian.

During the last year there have been nineteen new mines opened. All of them are equipped with the latest improved machinery for ventilating, and handling coal. Their locations will be found tabulated elsewhere in this report.

One mine was abandoned last year.

There are sixty-five mines in operation in the State of which fifty-one came under the jurisdiction of the mining laws at the close of the last biennial term; of this number forty are shaft and eleven slopes. Ventilation is produced by forty-five fans and six furnaces; power used, steam, fifty, and electricity, one.

Out of the fifty-one mines in the State that come under the jurisdiction of the mining law, $80\frac{1}{2}$ per cent are known as gaseous mines.

The total area of workable coal fields in the State is estimated at about 2,000 square miles. The coals of these fields vary in character and quality, and are generally classed under the heads of semianthracite and semibituminous.

SCALE INSPECTIONS.

There is a law requiring the mine inspector to test all scales at the various mines, used for weighing the miners' coal.

During the past biennial period, fifty-four sets of scales have been tested and some of them several times. A great many of them have been found deficient, and when found in such condition the companies have, in nearly every case, been willing and ready to place the work of adjusting the same in a scale company's hands, to be placed in proper weighing condition as quickly as possible; still in some cases scales were found deficient after being taken out, repaired and replaced.

The only reason for such to occur was the incompetency of those attempting to adjust the same, which means not only additional expense to a company, but delay and annoyance to all concerned.

The inspector finds in a large majority of cases where he is called upon to test the scales at various mines that the trouble lies in the dividing of each man's coal.

Where a scale beam does not break quick or requires too much weight to show the movement of the same it is impossible for the weighman to give each man his just dues, and yet on the other hand, it is impossible that the aggregate, or full car, will have been weighed within 150 or 200 pounds either way; showing that in the case that the weighman has credited the men with all the coal that is due them, but might not have placed on his bulletin the proper weight for each individual car, giving too much weight to one and not enough to the other.

This may be caused from a number of reasons, the weather, the contracting and expanding of the extension rods, knives or bearings becoming dull and foundations settling and becoming uneven or being bound so that the platform does not work freely.

VENTILATION OF MINES.

The ventilation of coal mines is a matter of such vast importance, not only with reference to the miner but to the successful operation of a mine, as to admit of frequent reference to it. If herein anything can be done that will tend to stimulate efforts on the part of those whose duty it is to look after this important feature of underground work, and thus advance greater interest in the betterment of the conditions of our mines, I feel it my duty to do so in face of the possible charge and criticism that the subject of ventilation is too often referred to.

An able author in his treatment of the subject of ventilation, states in substance that in the mines that are free from fire damp, less elaborate arrangements will serve every requirement of health and safety, from which might be inferred that such mines are always in a perfect state of ventilation. Unfortunately, however, the absence of fire damp is too often accepted as a privilege for neglecting ventilation in many mines. The miner is subjected to an atmosphere so thick and stagnant that his lamp will not burn. But I am pleased to say that this is not the case in our mines that come under the mining laws of Arkansas.

Your inspector, after spending five years of touring through every mine in the State that works ten or more men, claims the ventilation is far above an average of other States. This is due to our up-to-date fans and large clean air courses. The greatest trouble to overcome is our doors and stoppings. Doors are something that cannot be done away with, as long as entries are used as traveling roads and haulways, as a permanent stopping cannot be erected, and in any entries where it is not intended that the air current shall pass, doors are used to prevent its passage. It is also impossible to construct a door capable of resisting the force of an explosion such as occurs in a gaseous mine, or the force from a windy shot so often happening where

the coal is shot off the solid. It is also impossible to erect them air-tight, so that their employment must, of necessity, result in a serious loss of air under the most favorable circumstances. Where these reasons are practicable and as much as possible their use should be avoided in connection with the ventilation of mines. However, we cannot see how it is possible to dispense with them altogether. Then so long as they cannot be done away with it is of the foremost necessity that the closest attention be given to locating, erecting and continual repair.

In hanging a door, care should be taken to make it rest closely against the frame so as to reduce the dragage as much as possible. To the same end, the parts of the framing and of the door which come in contact should be covered with canvas.

The framing in construction should be inclined, for the purpose of causing the door to close by its own weight when open, but this should not be construed to mean that doors should close by themselves after the driver or men pass through, for all doors should be tended by trappers to close them immediately after the passage of a trip or adman, yet I find it a common occurrence at some mines that the driver plays the part of a trapper as well as a driver. He finds it too much trouble to be getting off his trip to open and close the doors, so they stay open until he returns with his trip.

This is a frightful source of producing defective ventilation. This defect may be complained of to the inspector by the miner, and if the remedy remains unsolved after reporting to the mine foreman, whose duty it is to watch for such violation and either discharges the guilty driver or sees that a trapper is employed for the door.

INSPECTION BY COUNTIES.**SEBASTIAN COUNTY.**

Production 1,096,159 tons.

JENNY LIND POST OFFICE.

Western Coal and Mining Company: B. F. Bush, general manager; A. Beveridge, superintendent.

This company owns and operates two mines in the vicinity of Jenny Lind. Both have shaft openings, and have shipping connections with the Missouri Pacific Railway.

Mine No. 17. Depth of shaft, 184 feet; thickness of coal runs from 5 to 7 feet; ventilated by a 6-foot high-speed Capell fan.

I made my first inspection of this shaft for this year, July 7, 1905. I found the fan running 295 revolutions per minute. This air measured 86,764 at the down-cast, which was split at the bottom of the shaft, 42,384 feet going into the slope, which was split once more at the face of the slope; the other 44,380 feet was forced into the north entry, where it was split for each 50 men.

I found 260 men and boys working inside. After spending the day and could find no complaints from the miners, it was evident that the mine was in as safe condition as could be expected. I made three other visits to this mine during the year and found conditions very satisfactory.

Mine No. 18. George Whitfield, foreman; depth of shaft, 208 feet; ventilated by a 22-foot Crawford & McCribben fan. It was making 42 revolutions per minute and furnishing 73,381 cubic feet of air per minute, which had four splits, averaging about 35 men to each split.

After inspecting all working places and traveling roads, I found the mine in a safe condition, and operating in accord with the law.

I made another inspection of this mine on the 11th day of October, and I found that the foreman was getting careless in regard to keeping the doors and stoppings in proper repair. I informed Superintendent Beveridge of my findings and he assured me that he would have all the doors and stoppings that I had complained of repaired at once, and with that understanding, I passed the inspection.

I made two other visits to this mine during the year, and on each occasion found conditions very good.

Number of men employed, 125; output, 500 tons daily.

BONANZA POST OFFICE.

Central Coal and Coke Company have one mine in operation here and is sinking another one, which will be in operation in the course of a few months. W. M. Perry, president; David Mackay, general superintendent; Robert Barr, local superintendent.

Depth of shaft, 320 feet; thickness of coal, $3\frac{1}{2}$ feet; ventilated by a 16-foot fan.

I visited this mine for my first inspection on July 8, 1905. I found the fan running 80 revolutions per minute, and furnishing 34,391 cubic feet of air per minute, which was split in four special currents. After inspecting all the places that were working I found that the force was very small there, being only about 65 men in the mines, and as there was a shot-firing system, and no shots being allowed to be fired during the day, the ventilation was very good and all places were free from standing gas.

I returned October 12, and made a thorough inspection of all working places, and as the force was still smaller than on my previous visit, and the air current was equally as good, I had no recommendations to offer. I made two other visits during the year and found the same good conditions existing.

BURMA POST OFFICE.

Dallas Coal Company operates one mine here. John Finey, superintendent. Shaft opening, 64 feet deep.

I inspected this mine and found about 45 or 50 persons employed. The main entry was driven some 800 or 900 feet from the bottom of the shaft and cross entries turned on both sides of the entry every 200 feet. In all there were eight cross entries. After I had inspected the first pair of cross entries it was evident that the mine was in a bad condition for want of more ventilation. I went to the air shaft and found a poorly constructed furnace which was supposed to furnish the air for the mine. I informed the foreman that it had outlived its usefulness, and must be done away with and some other appliance put in its place that would furnish more air. I recommended a fan and informed Mr. Freeze, the boss, that if he insisted on working as he was without furnishing sufficient air for the men I would be forced to file a complaint and ask the court to shut his mine down. He agreed to suspend operations until he could install a fan as I had recommended. With this assurance I passed this inspection.

October 14 I inspected this mine again. I found a 10-foot fan installed in place of the old furnace. It was running 80 revolutions per minute. The air measured 19,312 cubic feet per minute, or double the quantity it did on my previous visit, and general conditions were very good.

Number of employees, 40; output, 250 tons daily.

Bach-Denman Coal Company operates one mine. I visited this mine July 10, 1905. I found it idle and no one there, so I made no inspection.

I visited this mine again in February, 1906. The mine had started up with about 25 miners. The fan was running 80 revolutions per minute. The air measured 16,304 cubic feet per minute. After inspecting all the places below the second west, I passed into this entry. I found the same old complaint. The rooms

were being driven without cross cuts from one to the other, the company refusing to pay yardage for them and the miners refusing to work them without yardage, consequently the rooms were without air. I informed mine foreman, W. A. Atkinson, that these conditions must not exist any longer, and that he must have cross cuts driven from one room to another every 40 feet so as to furnish the rooms with the proper ventilation. He then notified all miners to make the break-throughs as requested by me.

Later on I again visited this mine and I found conditions very much improved, the rooms all being now connected by cross cuts and the air current was passing around the faces instead of on the main entries as on my former inspection.

MONTREAL POST OFFICE.

Branner Coal Company operates one mine here. J. M. Cravens, superintendent; Millie Evans, foreman; depth of shaft, 554 feet; thickness of coal $3\frac{1}{2}$ feet; inspected, July 11, 1906.

I found a 12-foot fan running 80 revolutions per minute. The air measured 19,384 cubic feet per minute. After inspecting several working places it was evident the quantity of air that was passing down the intake was being allowed to waste as it was entirely too smoky at the face. After examining the stoppings and doors I found that they were in bad order and I pointed this matter out to Foreman Evans and requested him to repair them, which he agreed to do at once.

Number of men employed, 40; output, 150 tons daily.

October 17 I again visited this mine and found that the complaints I had made on my former inspection had been corrected. New doors hung in place of the old ones and the stoppings had been repaired. As a whole the mine was in very good condition.

HARTFORD POST OFFICE.

Hartford is a prosperous mining town located on the Rock Island Railroad and supported almost entirely by the mining operations in the vicinity. There are from 500 to 800 miners employed within a radius of two miles of the town. The coal that underlies the surrounding country is almost inexhaustible.

Central Coal and Coke Company: W. M. Perry, general manager; David Mackey, superintendent.

Slope opening, driven about 1,000 feet; thickness of coal 4 feet; ventilated by two fans, one 12- and one 16-foot.

I made this inspection July 12, 1905. I found 68,312 feet of air passing to the slope per minute, which was split at the face of the slope, making two separate splits, one going back through the east side and the other furnishing the west side of the slope. After inspecting all working places I could find no complaints, as the company was doing everything possible to keep the mine in a safe condition.

Number of inside men, 95; tons per day, 400.

I visited this mine again October 17, 1905. I found the company sinking a new air shaft at the face of the slope with a view of installing a large fan, which will shorten the air circuit, by cutting off all the old air courses and making a direct outlet for the air right at the face of the workings.

Mine Foreman Boyd expected to have this shaft completed and fan installed in a few days, and as the mine was in very good condition I had no cause to complain.

I have since made two other inspections of this mine and found abundance of air, and no standing gas.

Imperial Coal Company: G. L. McElhenie, superintendent and foreman.

Slope opening. The main shaft had been driven down about 300 feet, with two cross entries just turned away. There were some four or five rooms turned from each and in all there were only 15 men in this

mine. As I found conditions very satisfactory, I passed this inspection.

Later on I returned to this mine but it had been closed down. The company that formerly operated it had gone out of business, so I made no inspection.

Patterson Coal Company. Slope opening; thickness of coal, $3\frac{1}{2}$ feet; ventilated by a 12-foot fan.

I inspected this mine July 13, 1905, for the first time this year. The fan was making 100 revolutions per minute, and the air measured 19,045 cubic feet at the intake of the air. There were 50 miners at work, producing about 250 tons daily. John Patterson, superintendent and mine foreman.

After inspecting the working faces it was plain to be seen that there was something the matter with the ventilation, as the lamp smoke was in clouds all over the mines and only a very small quantity of air passing through the faces at all.

I soon discovered that there were no break-throughs between the rooms, as the men would not make them without being paid yardage, which the company refused to do.

I informed Mr. Patterson that cross cuts must be made between all rooms at intervals not to exceed 40 feet, and old cross cuts must be stopped up so as to force the air to the face of the rooms instead of allowing it to pass along the main entries, as it was then doing.

He agreed to do this and ordered all room men to make cross cuts at once.

I returned October 18 and found conditions, as far as cross cuts were concerned, satisfactory, as all three rooms had been connected by break-throughs; but since my last visit the company had started to sink a slope for another pair of entries and laid a steam line down the main slope which is the main intake of the air in the mines. The steam pipe heated the air so that by the time it reached the men it was of very little service. While the quantity of air which was passing through the mine was sufficient, it did not have the effect it should have had.

I requested Mr. Patterson to have a drill hole put down at the face of the slope and to take his steam

line overland and down through the drill hole, and by doing so he would have a fresh, cool current of air to go direct to the working face. He assured me that this would be done without delay.

I made two other inspections and found conditions very much improved.

BoLEN-DARNELL COAL COMPANY. Slope opening, driven in about 1,500 feet. Horace Whitsell, superintendent; John McLain, mine foreman.

This mine is ventilated by two fans, one 16-foot Crawford & McCribben and one 6-foot high-speed Sullivan fan.

I inspected this mine July 14, 1905. After inspecting all working places and traveling roads it was evident that the men in charge were complying with the mining law in every respect, by furnishing an abundance of air and using every precaution for the protection and safety of their workmen.

There were about 80 men and boys employed, producing 350 tons of coal per day.

I have since made three visits to this mine and found the same good conditions existing, the mine being free from any standing gas and furnished with plenty of good fresh air.

HoffMAN COAL COMPANY; slope opening; ventilated by a 12-foot fan. A. J. Hoffman, superintendent; Nath Caple, mine boss.

I found the fan running 60 revolutions per minute. The air measured 16,384 cubic feet per minute, which was very little service to the mine, owing to the system they had of conducting it inside. There was only one air course driven along with the slope, and no overcast to convey the air from one side of the slope to the other.

They pretended to do it by placing a curtain across the main slope which allowed the air to pass under it and return to the fan without reaching the face where the miners were at work.

I informed Mr. Hoffman that he must drye an air course and erect an overcast and split the air and see that it was forced to the face at once, or I would have to take the matter to the courts.

He agreed to this at once and with that understanding I passed the inspection.

October 20, I made another inspection and found that an overcast had been erected and connections had been made with both on both sides of the slope, as I had demanded on my former inspection, and as a whole conditions were much improved.

I made two other visits to this mine during the year, and at each time the mine was shut down and I made no inspection.

GREENWOOD POST OFFICE.

Greenwood Coal and Lumber Company: Robert McFarland, general manager; George Hughes, superintendent.

This company owns and operates one mine here and have shipping connections with the Midland Valley Railroad.

The seam varies from 3 feet and 6 inches to 6 feet and 6 inches in thickness.

Slope opening; steam power.

Mine No. 1. James Darby, foreman; ventilated by a 12-foot fan.

A lawful inspection of this mine was made July 18, 1905, and found in very fair condition. The air was fresh and strong and I had no complaints to make. There were about 50 miners working at this mine, producing about 250 tons per day.

I made three other inspections of this mine during the year and on each occasion I found the same good conditions prevailing.

Fidelity Fuel Company: Frank McQuire, superintendent and foreman.

Slope opening; ventilated by a 16-foot fan. This fan was running 50 revolutions per minute, and the air measured 42,612 cubic feet per minute at the intake.

After a very careful inspection of all working places and all traveling roads it was very evident that Mr. McQuire was a very careful and conscientious

mine manager, as I could see every evidence of protection for the miners who were employed in this mine.

They were supplied with plenty of fresh air and good traveling roads, and the mining laws were being lived up to the letter.

They work 90 people and have a capacity of 300 tons daily.

I made three other visits to this mine during the year and found everything in apple-pie order, and no complaints to make.

MIDLAND POST OFFICE.

Mammoth Vein Coal Company: Slope opening; ventilated by a 12-foot fan; thickness of coal, $7\frac{1}{2}$ to $8\frac{1}{2}$ feet, with two partings.

I inspected this slope July 20, 1905, for the first time this year. I found the fan running 70 revolutions per minute. The air measured 38,184 cubic feet per minute, which had two separate splits. The main current split at the face of the slope, half returning through the east side and the balance through the west side over the overcast to the fan.

I found about 70 miners employed in the mine, and as the air courses, stoppings and doors were all in good repair, the mine was in a healthy condition.

Mine foreman, Thomas Mills.

I made another inspection October 20, and found conditions somewhat changed from what I had found them before. Mine Foreman Mills had become careless in regard to making break-throughs between the rooms and allowed the current that should be forced to the face of the rooms to waste through the cross cuts.

I demanded of Mr. Mills that he have all cross cuts filled up in the rooms except the last one near the face of the working places. He agreed to do so.

I returned February 21, 1906, and found my demands had been carried out and the mine was in very good condition. I again visited this mine, but I found the mine idle and made no inspection.

HUNTINGTON POST OFFICE.

Central Coal and Coke Company operates two mines, both shaft openings. W. M. Perry, president and general manager; W. M. McKinley, district superintendent.

Mine No. 2. Shaft opening; ventilated by 16-foot fan; thickness of coal, 6 feet.

I inspected this shaft July 21, 1905. I found the fan making 65 revolutions per minute. The air measured 38,916 cubic feet per minute, which had three separate splits. As there were only about 60 employees in the mine at this time and plenty of air to keep the mine in a healthy condition, I considered that the laws were being fulfilled.

Mine foreman, Robert Goot.

I made three other inspections during the year, and at each time found the mine in good condition.

Mine No. 3. Thomas Evans, foreman.

Depth of shaft, 180 feet; ventilated by a 12-foot fan; thickness of coal 8 to 9 feet, with two distinct pointings in the center.

This is one of the largest capacity mines in the State. It has a working force of 275 men and boys, and hoists from 800 to 900 tons daily. After inspecting all working places and traveling roads I found the mine in a satisfactory condition.

I made another inspection on October 26, and after visiting all the workings I was well satisfied that the mine was free from any standing gas and the ventilation was very good.

I made two other visits to this mine during the year and found everything in apple-pie order, and the mine in good condition.

FRANKLIN COUNTY.

Production 339,449 tons.

Franklin County is the second largest coal producing county in the State. Only four mines were operated to produce the above amount of coal, which will give a better idea of the character and capacity of the mines than could be gathered from a long, detailed statement. These four mines produced 12 per cent of the entire output of the State.

DENNING POST OFFICE.

Western Coal and Mining Company: B. F. Bush, general manager; A. Beverage, district superintendent. This company owns and operates three mines in and around Denning, all having shipping facilities with the Missouri Pacific Railway.

Mine No. 1. James Kears, mine foreman; shaft opening; ventilated by a 12-foot fan.

I made four inspections of this mine during the year. On my visit to this mine July 25, I found the air somewhat leaking in the east entries. After investigating I soon discovered the doors and stoppings were being allowed to become leaky and waste the air. I pointed this matter out to Foreman Kears and demanded that he fix them at once, which he agreed to do.

Number of employees, 80; output, 300 tons daily.

I made three other inspections during the year and found the company finishing up this mine with the intentions of abandoning it as it was getting too far to haul the coal.

Mine No. 2. Herbert Thomas, foreman; depth of shaft, 174 feet; thickness of coal, 4 feet; ventilated by a 20-foot fan. The fan was making 70 revolutions per minute at this inspection and the air measured 89,346 cubic feet per minute, which had seven splits after entering the mine, four on the west plain and three on the south plains.

The output of this mine is handled inside by electric motors; they are of the overhead trolley pattern and give good satisfaction by hauling 1,000 tons daily.

The amount of air required by law was being furnished to the mine, but was being wasted through the leaky stoppings on the main west plain, before reaching the working faces. I pointed this matter out to Mr. Thomas, and demanded of him that he repair the stoppings at once. He agreed to do this, and with this understanding I passed this inspection.

Number of men inside of mine, 275.

On October 30 I made another inspection of this mine and found that all the stoppings had been repaired and the doors overhauled. The air current was much stronger than it was on my former visit, but after visiting the faces it was very evident the mine could not be in a good state of ventilation under the system of shooting, as the men were then doing.

Upon investigation, I found that there were from 25 to 30 kegs of powder used each day at the dinner hour, which caused the entire mine to be clouded with smoke for some two hours in the afternoon. I requested the miners to do their shooting in the evening, so as to do away with all powder smoke while the miners were in the mine.

I was met with the same old excuse: They could not make enough coal and shoot once a day, while at the same time over one-half of them are doing all their shooting at the noon hour so as to get out early in the evening.

As I found the quantity of air was in accordance with the law, and the company was doing everything possible to keep the mine in a healthy condition, I was forced to pass up this inspection.

I made two other inspections during the year and found conditions about the same on each visit.

Mine No. 3, located a mile and a half east of Denning, at Alix Post Office. Depth of shaft, 170 feet; thickness of coal, 4 feet; ventilated by a 20-foot fan. William Beveridge, mine foreman.

I inspected this mine July 27, 1905, for the first time this year. I found the fan running just about

half its capacity, and furnishing an abundance of fresh air. After inspecting the west entries of the south plain I moved over to the east entries and discovered that the air current was being allowed to waste through the old leaky stoppings and returning back to the upcast without reaching the faces. I informed Mr. Beveridge that this must be remedied at once, as he had plenty of air coming into the mine, and it was the duty of the foreman to see that it was forced to the proper place. I also told him I would require that he repair the doors and stoppings at once. He immediately put a force of men to repairing the defective doors and stoppings. With this exception the mine was in good order.

I visited this mine again October 31. After visiting all the working places I found conditions much improved, the stoppings and doors that I had complained of on my former visit had been repaired and the air current was being well forced to the face. I had no complaints to make or recommendations to offer on this inspection.

JOHNSON COUNTY.

Production, 229,477 tons.

This is one of the largest mining counties in the State. It is third in rank in the order of output of coal.

Johnson County has two distinct veins of coal, one a bituminous and the other a semianthracite. The bituminous fields are located in the vicinity of Coal Hill and the semianthracite fields are located around Spadra.

COAL HILL POST OFFICE.

The Western Coal and Mining Company owns and operates one mine here. It is a shaft opening, 160 feet; ventilated by a 16-foot fan. John Young, mine foreman.

On July 27, 1906, was the date of my first inspection. I found the fan running 65 revolutions per min-

ute and furnishing 38,396 cubic feet of air per minute, which had four splits; first splitting at the bottom of the shaft, half going to the north slope, which was split again at the face of the slope, giving each side a fresh current. The other half of the main current went to the south plain, which furnished the east and west entries off of the plain.

After inspecting all working places it was evident that Foreman Young was becoming very careless in the system of ventilation, as his doors and stoppings were in a very bad condition. While the miners were not suffering for air it could be very much improved by repairing the doors and stoppings and forcing the air to the faces. I pointed this out to Mr. Young and demanded that it be remedied at once, which he agreed to do.

I went back again in about thirty days and found my demands had been complied with and conditions throughout the mines were very satisfactory.

I made two other inspections of this mine during the year and at each date the mine was in good condition, with plenty of fresh air.

Number of employees, 125; output, 450 tons daily.

The West Coal Company owns and operates one mine here. W. H. West, president and general manager; R. A. Schmidt, superintendent and mine foreman.

Depth of shaff, 65 feet; thickness of coal, 4 feet; ventilated by a 12-foot fan.

This is a new mine, just getting opened up, and from all appearances and the way this company is equipping both the inside and outside it will be one of the best plants in the county in the near future.

Number of employees, 30; output, 100 tons.

SPADRA POST OFFICE.

Central Anthracite Company operates one mine here; shaft opening, 90 feet; thickness of coal, 3 feet; ventilated by 15-foot fan. Superintendent, John Dunn; mine foreman, Robert Stuzley.

I inspected this mine for the first time this year, August 1, 1905. I found the fan running 70 revolutions per minute; the air measured 26,329 cubic feet per minute at the down-cast.

All the workings were in the north side of the shaft. The main north entry had been driven in about 600 feet and two pairs of cross entries turned away, one east, the other west. After inspecting the main north and those two entries it was evident there was something very radically wrong, as the strong current of air that was coming down the main intake could hardly be felt at the second pair of cross entries. After examining the stoppings and doors from there out to the main shaft it was very easy to locate the trouble. The stoppings had been allowed to get leaky and the doors on the first east and second west were in a bad condition and allowed the air to pass back to the air shaft without reaching the working faces. I pointed this out to Superintendent Dunn, and demanded of him that he have the doors and stoppings repaired at once. He assured me that he would put a force of men to repair them at once and comply with my demands.

I made three other inspections of this mine during the year and in each case I found the mine in good condition.

Inside men, 40; output, 100 tons per day.

Consolidated Anthracite Coal Company owns and operates three mines at Spadra. This company owns the largest body of land in the county, which consists of 9,000 acres. R. D. Dunlap, president and general manager; J. B. Shell, superintendent of Mine No. 1. Shaft opening; ventilated by a 12-foot fan.

I made first inspection for this year August 2, 1905. The fan was running at the rate of 90 revolutions per minute; the air measured 18,312 cubic feet per minute. The main north entry is the only main entry that is driven. It is driven in some 800 feet with four pairs of cross entries turned off east and west. I found this air passed into the main north and split at the face, making two separate splits, one going to the east entries and the other passing through the west.

After inspecting all working places on the west side I passed over to the east, where I found conditions were not so favorable. I found the air current very weak, and soon discoverd the main return way had been allowed to cave in and cut off a large portion of the air current from that side. After taking measurements of the air, I informed Superintendent Shell that he must close up this air course or I would condemn the mine and ask the proper authority to close the mine down. Mr. Shell assured me that he would start at once to put the mine in proper condition.

I visited the mine again October 16 and found conditions very much improved. The air courses had been closed up and the air current was strong and fresh and the mine was in very good condition.

Number of miners, 30; output, 80 tons per day.

I made two other inspections of this mine during this year and found everything O. K.

Mine No. 2 has been closed down for some time, as the company is building a large breaker and installing new machinery with the expectation of making this the finest mine in the Spadra field.

As there was nothing doing I made no inspection.

Mine No. 5. Slope opening; ventilated by a 12-foot fan.

I visited this mine for the first time August 4, 1905. I found a force of men at work retimbering the slope and laying the track with new steel. The company is contemplating installing an electric motor to haul the coal as the slope is getting too long to haul by rope.

I visited the mines again October 6. I found a few miners at work opening up some old entries that had been abandoned years ago. In all there were about 20 men in the mine. The air was in fair condition. I made two other inspections during the year and found the mine in very good shape and I had no complaints to make.

Spadra Creek Coal Company: Shaft opening, 80 feet deep; ventilated by a 4-foot high-speed fan; Dan Hawkins, superintendent; Joe Parker, mine foreman.

I inspected this mine August 4, 1905, for the first time during the year. I found the fan making 250

revolutions per minute. The air measured 21,874 cubic feet per minute, which had two splits, one going to the east, the other to the west side. After passing through all the working faces I found conditions very good. The mine was supplied with plenty of fresh air and all safety appliances and traveling roads in good order.

Men working, 35; daily capacity, 100 tons.

I made three other inspections during the year and found everything all right each time.

Eureka Anthracite Coal Company: Albert Oliver, superintendent; Joseph Oliver, mine foreman.

Shaft opening; ventilated by a 12-foot fan.

This is the largest capacity mine in the Spadra District. It has an output of 200 tons per day.

I inspected this mine August 5, 1905, for the first time during this year. The fan was running 80 revolutions per minute. The air measured 26,394 cubic feet per minute. There were 65 men employed in this mine.

After inspecting all the working places I had no complaint to make, as this mine was being operated in a safe condition and in compliance with the law.

On my other inspections of this mine I found the same conditions existing.

Clark-McWilliams Coal Company: Shaft opening; ventilated by a 10-foot fan.

I inspected this mine August 7, 1906. The fan was running 65 revolutions per minute. The air measured 16,428 cubic feet per minute.

After passing through some few of the working faces I discovered the ventilation of the mine was very inferior, as there were no cross cuts being made between the rooms for the air to pass through, and the stoppings and doors had become racked and allowed the air to pass through and waste instead of going to the working faces. I returned to the top and stated my complaints to Superintendent McWilliams and demanded that he have cross cuts from one room to another at every 40 feet, and that he must have his doors and stoppings repaired as soon as possible. He assured me that this would be done and I passed this inspection.

I returned October 7 and found conditions very much changed from what they were at my last inspection. The doors and stoppings had been repaired, and the cross cuts between the rooms had been driven, and the mine was in good shape.

Number of men employed, 30; output, 100 tons daily.

CLARKSVILLE POST OFFICE.

Clarksville Anthracite Coal Company: James James, superintendent; T. A. O'Brien, mine foreman.

Shaft opening; ventilated by a 12-foot fan which was making 60 revolutions per minute. The air measured 21,834 cubic feet at the down-cast.

I made an inspection of this mine August 9, 1905.

There was only a very small force of men at work on this date, and conditions were very good as to ventilation, and all traveling roads in good condition.

I made three other visits to this mine during this year, and I always found things in good shape on each visit.

SCOTT COUNTY.

Production, 50,609 tons.

COAL DALE POST OFFICE.

Black Diamond Coal Company owns and operates one mine here. G. H. Witte, general manager and superintendent; Dave Little, mine foreman.

Slope opening; ventilation, two 16-foot fans.

I inspected this mine July 29, 1905, for the first time this year. I found the fans making 60 revolutions per minute and the air measured 41,312 cubic feet per minute.

After inspecting all working faces it was evident that this is one of the most difficult mines in the State to ventilate, as the roof that overlays the coal is very bad, causing falls to come in the air courses and block-

ing them. The company was doing everything in their power to keep the mines in a healthy condition by clearing the air courses as fast and as well as they could do. I had no complaints to make.

Number of men employed, 60; output, 250 tons per day.

POPE COUNTY.

Production, 38,875 tons.

RUSSELLVILLE POST OFFICE.

Southern Coal and Anthracite Company owns and operates a mine here. John White, general manager; "Bud" Eustice, superintendent.

Slope opening; ventilated by a 10-foot fan.

I inspected this mine August 21 for the first time this year. The fan was running 100 revolutions per minute and the air measured 14,312 cubic feet per minute. It had no separate splits. I found the main slope stopped, as the company is sinking a shaft in the basin of the coal and expect to abandon this old slope as soon as they can get the shaft in operation. There were about 26 men at work at this date and producing 50 tons per day.

I inspected this mine on my regular round during the year and on each occasion found conditions very good.

Russellville Coal and Anthracite Company: M. H. Hoye, president and general manager; J. H. Baker, superintendent; Robert Baker, mine foreman.

Shaft opening, 80 feet; thickness of coal, 28 inches.

I inspected this mine August 21, 1905. I found two fans running 80 revolutions per minute. The air measured 28,310 cubic feet per minute, which had two separate splits. I found the conditions very good, as the mine was free from any standing gas and all the safety appliances and traveling roads were in a safe condition.

I made another visit to this mine on my regular rounds and found conditions the same on each inspection.

There were about 40 men employed, with an output of 100 tons daily.

Ouita Anthracite Coal Company: J. P. Hoye, general manager; Lee McDowell, mine foreman.

Shaft opening; ventilated by a 12-foot fan; thickness of coal, 26 inches.

This property is better known as the Lloyd Coal Company, and was one of the first mines opened in this State, and has been in operation for the past twenty years. Owing to its fine quality of coal for domestic purposes they have no trouble in working the entire year. Owing to the quantity of water there was to overcome it would have been very difficult to operate it at a profit.

I inspected this mine for the first time this year August 22. After inspecting all working places and all through the mine I thoroughly demonstrated the fact that good management is necessary as can be seen in this little plant. The new management has established a large pumping station at the foot of the shaft and ditched all the water to this point, where it is being handled without any further trouble and now the traveling roads that were once a mass of mud and water present a different appearance, and the dread of water is a thing of the past.

The matter of ventilation was, by far, a greater problem than the water, as the mine had been worked on single entry system and depending on the rooms for air courses, which, in time, caved in, cutting off all returns or inlets as the case may be, but I am pleased to say this company wasted no time, but started men to work driving through the old workings and pillars, and now, with a few exceptions, which will soon be added, I consider this mine among the best regulated mines in the State.

Men employed, 50; output, 90 tons per day.

I made three other inspections during the year and found everything in good shape each time.

LOGAN COUNTY.

Production, 20,950 tons.

PARIS POST OFFICE.

Two mines in the vicinity of Paris having shipping connections with the Arkansas Central Railway.

Union Coal Company: Carl Mesick, superintendent; Sam Douglass, mine foreman.

Slope opening; thickness of vein, 26 inches; ventilated by a 12-foot fan.

I inspected this mine August 23, 1905. The fan was running 80 revolutions per minute, and the air measured 10,926 cubic feet per minute, which split at the face of the main slope, returning to the up-cast.

After inspecting all working places and traveling roads, I had no complaints or recommendations to make, as the mine was well supplied with air and all traveling roads were in excellent condition.

Men employed, 35, with an output of 100 tons per day.

I made three other inspections of this mine after this and found everything in excellent condition each time.

Paris Semianthracite Coal Company.

Mine No. 1. Joe Pendleton, superintendent and mine foreman. As the company were drawing pillars with the intention of abandoning the mine in a short time, they had but a few miners working, just getting what coal they could near the main slope.

Inside men, 15; output, 25 tons daily.

FATAL ACCIDENTS.

Walter Horner, a miner working for the Western Coal and Mining Company, at Denning Mine No. 2, was killed by going back on a shot, July 5, 1905. He was working in Room No. 12 on the tenth north entry off the main west plain, on the south side of shaft. He had ignited his shot and went back to the entry, and after waiting some time he came to the conclusion that the shot had missed and went up to resquib it, and just as he got to the face of the coal the shot fired, throwing coal on him, killing him instantly. He was 25 years of age and leaves a wife.

Frank Galop was killed in his working place by a fall of rock, on September 26, 1905. He was working for the Western Coal and Mining Company, in Mine No. 3, near Denning, in Room No. 3, on the second west off of the south side of shaft. I inspected the room where the accident occurred the following day. It was no surprise to me that Galop was killed, as after inspecting his room I found no props set nearer than 20 feet of the face, and a rock had fallen, which was 14 feet long, 6 feet wide, and 1 foot thick, and crushed him to death. There was no reason for this accident to have happened if the proper amount of timbers had been set, but he allowed the roof to break, which caused his death.

He leaves four children.

On October 10, 1905, Mike Torb was killed by a fall of rock in his working place in the Central Anthracite Coal Company's mine at Spadra. He was working in Room No. 3 on the second west entry.

I inspected the room the day after the accident occurred and found rock had fallen 12 feet long, 6 feet wide, and 1 foot thick. From the statement of the men who removed Torb from under the rock he had blown out some props with his shot and was in the act of setting them back when the roof gave way with the above results.

The coroner's jury rendered a verdict of accidental death.

Luther Martin and Henry Moss were burned by an explosion of gas in the Eureka Anthracite Coal Company's mine, at Spadra, October 18, 1905. They were working on the fourth entry; Moss in Room No. 2, and Martin in a cut-off entry that was being driven behind a fault. I inspected the place where the explosion occurred and found it was carelessness on the part of the fire boss, as he made no search for gas that morning, and as these were tight places, with no air courses, and the ventilation depended altogether on curtains being nailed along the roadway to carry the air to the face of the coal, which cut off all ventilation and allowed the gas that accumulated in the face to back down to the end of the curtain or the temporary air course, where Moss lit it as he was going in his working place in the morning, burning Martin and himself. Martin died some time after from the effects of the burns.

John Redyard, Harry Redyard and James Scott were killed by a windy shot, October 4, 1905, in Mine No. 4, of the Central Coal and Coke Company, at Hartford. On my examination of the mine the day after I found a shot in Room No. 8 on the eighth west entry that in my opinion caused the explosion.

Below will be found my testimony and several others who were with me while making the inspection, also the coroner's jury verdict:

Testimony of Martin Rafter, at inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, who were killed at the Central Coal and Coke Company's Mine No. 4, on the 3d day of October, 1905:

Martin Rafter, being first duly sworn, deposed and testified as follows:

My name is Martin Rafter; I am a resident of Coal Hill, Arkansas. I am 38 years of age. I am State mine inspector.

On entering the mine most all the stoppings were blown out on the main slope below the sixth entry. The force of the explosion was seen most forcibly at the beginning of the eighth west entry and air shaft. All

the shots had been fired except in Room No. 2. In Room No. 5, eighth west entry, was found a shot that had probably caused the explosion. It was a break-through shot. The hole was about $6\frac{1}{2}$ feet long. I think that the coal was frozen at the top or bottom, or there was a roll in the coal. The shot evidently back-scuttled. There was evidence of the fire having gone three ways from the shot, viz: straight ahead down the room; through the break-through into Room No. 6, and through the break-through into Rooms Nos. 4 and 3. The props were all charred facing the break-through shot.

The shots had been fired from the face of the entry out. The explosion was not caused by gas. The lamps and caps were found in Room No. 3. The safety lamp was found about 12 feet from the face. The caps and open lamps were found a little further out. The men had crawled out to where they were found.

Q. How was ventilation of mine working at the time you entered the mine.

A. Had none until we got our curtains up. We took the air with us.

Q. Do all blowers always produce light carburetted hydrogen gas?

A. No.

Q. Was the report of the fire boss on the board for the last day the mine worked?

A. Yes; October 30, and the eighth west showed no gas. Curtain in Room No. 5, eighth west, was burned, and Room No. 6 partly burned. As near as I can tell the air was coming from the air shaft and south of the slope at the time of the explosion, the currents meeting about the eighth entry. The air course is up with the entry. The explosion was caused, probably, by a windy shot, augmented by smoke and dust. In my opinion, Harry Redyard, who was found on the eighth entry, was killed by after damp.

(Signed)

MARTIN RAFTER.

Testimony of Robert Boyd, in case of inquest held over dead bodies of John Redyard, Harry Redyard and James Scott, who were killed in mine explosion, October 30, 1905:

Robert Boyd, first being duly sworn, deposed and testified as follows:

My name is Robert Boyd; I live at Hartford; I am 53 years of age and by occupation superintendent of the Central Coal and Coke Company's mines at Hartford, Arkansas.

Q. You were the superintendent on October 30, 1905?

A. Yes.

Q. What time, in your opinion, did the explosion occur?

A. About 6:20 p. m.

Q. Who were killed in the explosion?

A. John Redyard, Harry Redyard and James Scott.

Q. Did you help find the bodies?

A. Yes.

Q. Where were they found?

A. James Scott was found a little inside of No. 2, eighth west; John Redyard was found a little inside of Room No. 3, eighth west; Harry Redyard was found at No. 1, eighth east.

Q. What was the condition of bodies when found?

A. Dead.

Q. How long after the explosion did you find them?

A. Between 9 and 10 o'clock p. m.

Q. Did you have any difficulty getting the bodies?

A. Yes. We carried the air part way and crawled the rest.

Q. How far up the slope did the force go?

A. Between sixth and seventh entries.

Q. Had there been any change in the ventilation of the mine?

A. An air shaft had been opened the day before on the slope about the ninth entry. I went to Fort Smith that day and left John Redyard in charge and cautioned him to see that everything was all right and to be careful.

Q. What position did John Redyard hold?

A. He was gas man and shot-firer.

Q. What were his duties as gas man?

A. To see that the mine was clear of gas before the men went down in the morning.

Q. What were his duties as shot-firer?

A. To fire all practical shots.

Q. Were both positions dangerous?

A. The shot-firer's position is very dangerous.

Q. What was his report as gas man the morning of the explosion?

A. It was clear of gas, except the second room from the face of the eighth west entry.

Q. How was the condition of ventilation before the air shaft was broken through?

A. In good condition.

Q. Do you consider John Redyard a competent man?

A. Yes. He never made a false report.

Q. Were you in the mine the day before the explosion?

A. Yes.

Q. How was the air?

A. Good. Everybody worked with naked lamps until quitting time.

Q. Do you think the air shaft breaking through caused gas to accumulate any place more rapidly?

A. No. It was for the purpose of preventing gas collecting.

Q. In your opinion what caused the explosion?

A. As near as we could find out it was caused by the break-through shot between Rooms Nos. 5 and 4.

Q. Which room was shot in?

A. In No. 5.

Q. How much powder was used in that shot?

A. About 2 feet is what I would have used.

Q. Was this a practical shot?

A. Yes. I would have fired it myself.

Q. Did he begin at the head of the entry and fire back?

A. Yes. In my opinion he did.

(Signed)

ROBERT BOYD.

Testimony of John Hubbard at inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, who were killed October 30, 1905.

John Hubbard, first being duly sworn, deposed and testified as follows:

My name is John Hubbard. I am 31 years of age. I reside in Hartford, Arkansas. I am a coal miner employed by the Central Coal and Coke Company, and worked October 30, 1905, as boss driver. My duties take me all over the mine. I was all over the mine the day of the explosion. The air was good. I know of no gas except a shade in Room No. 9, eighth west. I took the man there and put him to work and he worked all day with open lamp. There were several gas feeders in mine near bottom, but no standing gas. The air goes up back entry and back through main entry. The air came in full force from air shaft that day. It split at the shaft.

I know the parties killed. They were John Redyard, Harry Redyard and James Scott. They were killed about 6:20 p. m., October 30, 1905. I helped recover the bodies. We got to them about 10 o'clock. They were dead. I was in the eighth west about half an hour before the shot-firers. The men were all working with naked lamps. Room 9 is about 12 feet in. This is outside the last break-through. A curtain ventilates Room 9. We encountered hot smoke in getting the bodies. Some 30 or 40 stoppings were gone, mostly on main slope. We put some of those up. The air was good then. The explosion did not harm the fans. I think that the explosion was caused by a break-through shot in Room No. 5. The bodies were found 40 yards from Room No. 5. John Redyard and James Scott were both burned. Harry Redyard was not burned or bruised. The explosion generated flame. There was plenty of dust in rooms to cause explosions. The entry is wet, the rooms dry. John Redyard was apparently sober. John Redyard was measuring the day of the explosion.

(Signed)

JOHN HUBBARD.

Testimony of Peter Stewart at inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, killed October 30, 1905.

Peter Stewart, being sworn, deposed and testified as follows:

My name is Peter Stewart. I reside at Hartford, Arkansas; occupation that of miner. I am a district board member. I entered the mine November 1, 1905, with the party inspecting the mine. At the eighth entry all the stoppings were gone and a loaded trip was blown around. We waited until the eighth entry was inspected. It was clear of gas. The air had been circulating about 20 or 30 minutes. We found a shade of gas in the second room from the face of the eighth entry. We found a shot in Room 5 on the breakthrough that had evidently caused the explosion. It was a good lifting shot. We traced the fire into Room 6 and also into 4 and 3. We found lamps and caps in Room 3. The shots had been fired since coal had been loaded out.

No one had been forbidden to go down that I know of. I know of no objection to anyone going down. Mr. Rafter asked me to get three and go down. It is usually dangerous to go into a mine after an explosion.

(Signed) P. R. STEWART.

Testimony of Thomas Evans at the inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, who were killed October 30, 1905.

Thomas Evans, first being duly sworn, deposed and testified as follows:

My name is Thomas Evans. I am 43. I reside at Huntington, Arkansas. I am by occupation a coal mine foreman. I made a trip into the mine with the State inspector of mines. When we got to the sixth entry we began to find stoppings out and when we reached the eighth entry all were gone.

(Signed) THOMAS EVANS.

Testimony of William Jones at inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, who were killed by an explosion October 30, 1905.

William Jones, first being duly sworn, deposed and testified as follows:

My name is William Jones. I am 50 years of age. I reside in Hartford, Arkansas. I am a coal miner. I am employed by Central Coal and Coke Company. I worked October 30, 1905.

I went down November 1, 1905, and found that there had been a dust and powder smoke explosion. One cannot tell exact cause of explosion. The explosion came out of the eighth west entry. It went both ways, stronger down the slope to the air shaft.

(Signed)

WILLIAM JONES.

Testimony of Dr. W. F. Smith at inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, killed October 30, 1905.

Dr. W. F. Smith, duly sworn, deposed and testified as follows:

My name is W. F. Smith. I am a resident of Hartford, Arkansas. I am 34 years of age. I am a physician.

At about 9 o'clock on the night of October 30, 1905, I was called to the Central Coal and Coke Company's Mine No. 4, where there had been an explosion. About 12 o'clock Robert Boyd came out of the mine and said that the bodies of John Redyard, Harry Redyard and James Scott, shot-firers, had been found. I accompanied Mr. Boyd down to the fifth entry where the bodies had been brought.

Upon examination the bodies of John Redyard and James Scott showed that they had been dead about five hours, and that death had resulted from the effects of the explosion, the bodies being severely burned on back, head, face, hands and arms. There was no evidence of bodily injury. Harry Redyard had been dead two or three hours. There were no burns, death having resulted from asphyxiation.

(Signed)

W. F. SMITH.

Coroner's jury verdict in the inquest held over the dead bodies of John Redyard, Harry Redyard and James Scott, killed in the Central Coal and Coke Com-

pany's Mine No. 4, at Hartford, Arkansas, October 30, 1905:

We, the jury, find that John Redyard, Harry Redyard and James Scott came to their death by an explosion in Mine No. 4 of the Central Coal and Coke Company, at Hartford, Arkansas, on the 30th day of October, 1905. The cause of explosion, as far as expert testimony given, a windy shot and dust.

(Signed)

A. L. ROGERS,
JOHN LONG,
J. G. WILLIAMS,
CHARLES McGHEE,
THOMAS OLESON,
LAWN SUGGS,
W. T. LONG,
E. P. McGAUGHEY,
W. H. SPENCE,
JEFF MEALER,
JOHN SAMPSON,
HUGH MILLER.

M. A. DODD, J. P., *Acting Coroner.*

Stani Karboski, a shot-firer, was killed by a windy shot in Mine No. 4 of the Central Coal and Coke Company's mine, at Hartford, November 22, 1905.

My testimony and the verdict of the coroner's jury will be found below:

Testimony of State Mine Inspector Martin Rafter, at an inquest held over the dead body of Stani Karboski, killed in Central Coal and Coke Company's Mine No. 4, at Hartford, Arkansas, November 22, 1905.

Martin Rafter, first being duly sworn, deposed and testified as follows:

I am 38 years of age; I reside at Coal Hill, Arkansas. I am State Mine Inspector.

I received notice from the Central Coal and Coke Company of the accident day before yesterday and reached here last night. I selected several to go in and make the inspection with me. The explosion came from the eighth west entry.

All indications pointed that the explosion came from Room No. 11; a new room just being turned. The shot here was 2 feet and 9 inches on the solid in advance

of the cutting. The fire went both ways from here. The shot was a little bit lifting. A shot of this character will not do in this entry. It is against my orders. The character of the coal in entry is dry and makes dust and such shots as have been put in cannot safely be fired there. The dust and slack must be loaded out and not put in the gob.

The shot-firer had used no caution. It is a wonder that he got as far as he did without an explosion. He had left a cartridge 26 inches long lying about 2 or 3 feet from a shot that he fired. We found no gas except in Room No. 10, and there was just a shade, which was dissipated as soon as a curtain was put up.

He evidently had six shots lighted at the time of the explosion. He shot as he went in.

It is my opinion that the explosion was caused by dust and a windy shot.

It is possible to have too much air while the shots are being fired. After the last explosion I instructed Mr. Boyd to erect a door at the air shaft and during the firing of shots to have the air pulled from the south of the slope to have it nearer the temperature of the mine. Then the door was to be opened while the east side was fired. This was done. There is a difference in this temperature coming from the mouth of the slope and that coming from the air shaft, that from the slope being warmer. No one knows whether the door was closed on this day, as the explosion blew the door away.

I instructed the superintendent of this mine on October 30, or a day or two later, to sprinkle the eighth west entry of this mine, and if possible, to put in a steam spray, as it was preferable to a sprinkler. I also told him to erect a door at the foot of the air shaft so that we could cut off the cold air while shooting the eighth west, and force the fans to pull from the main slope; that in all cases in daytime when men were in mine to have the air shaft open so that we could get plenty of fresh air for the lower lifts.

The frame is there for the door, and, from what I understand, the door was put up there. I find a steam pipe where I ordered it put, and it is torn so I do not know whether it was jet or not.

I instructed them to sprinkle the dust, but not to move it, that I remember of.

The air shaft was put at this mine pursuant to my instructions previous to this time.

(Signed)

MARTIN RAFTER.

Testimony of Robert Boyd at inquest held over the dead body of Stani Karboski, killed November 22, 1905.

My name is Robert Boyd. I live at Hartford, Arkansas. My age is 52. My occupation is a coal miner. I am superintendent of Mine No. 4 of Central Coal and Coke Company, at Hartford, Arkansas. I was working in that capacity on November 22, 1905. The mine exploded on that day, 20 or 30 minutes before 7 in the evening. I was in the office of the company up town and received a telephone message from the mine. I went immediately and investigated. Myself and 10 or 11 others went down. We had to take the air with us and go down. We first found Lewis Stengus, shot-firer. He was on main slope on front side of sixth west entry. We found him about 9 or 10 o'clock. He was burned, but able to talk. We worked on down farther and found Stani about 11 o'clock. We found him in the dip room off the eighth west entry. He was burned slightly. The explosion was what killed him. I cannot tell where explosion took place. I have made no investigation. As far as I know, there was only one place marked off for gas on fire boss' report. I do not know whether there is any difference in the temperature of the air from slope and shaft. There is a door at the air shaft to close when they shoot, and there is no air coming down it when it is closed. There is also a steam pipe in the air course that runs into the eighth west. The steam from this dampens and wets the air in these places. In my opinion, the man had thrown himself in the position he was found in. Evidently the after-damp killed him. One shot fired in that room was a good shot. I would have fired the shot.

Yes, there was dust. I was through these places the day before this and there was no more dust than usual.

After the explosion previous to this, I had the rooms and entry washed down and wet. I had hose that reached from the slope to the face of these places.

I have complied with the order of the State Mine Inspector.

(Signed)

ROBERT BOYD.

Testimony of James Duca, at inquest held over dead body of Stani Karboski, killed November 22, 1905.

My name is James Duca. I live at Hartford, Arkansas. I am 31 years of age. I am by occupation a coal miner. I am fire boss at Central Coal and Coke Company's Mine No. 4, at Hartford, Arkansas. I was working in mine the 22d day of November, 1905. An explosion occurred on this date in this mine between 4 and 7 p. m. I was in the mine that day. My duties as fire boss are to inspect the mine each morning for gas before the men go to work. I am consigned to the east side of mine. Mr. Cadman is fire boss and performs same duties on west side of mine. There was no gas in mine on east side, but a little on the eighth entry (west) that morning. Cadman found the gas on the eighth west. When gas is found in the mine it is our duty to mark out the place where it is. We mark the rooms in the mine and then at the top on a bulletin board. I do not think that there was enough gas in the eighth west that day to explode. There is plenty of air circulating in the mine. The air is pulled down from two places and meets about the seventh entry. It takes a raw lamp to set gas afire. I think a bad shot caused the explosion. There was not so very much dust on the eighth west entry. A shot might raise the dust in some places.

I was with the party who found the man. We found him in a room on the eighth west entry, face downward, dead and badly burned. We found him at 11 o'clock p. m., 22d of November.

The explosion started from the eighth west entry and ran up and down the entry, then down the slope. The force mostly went out the air shaft down the slope. It was about two lifts back towards south of slope. It tore up mine pretty badly. The air divides

where it meets and goes into air courses. The current from the shaft is the stronger. I leave the mine at 4 p. m. The man's body was face downward. It looked like the explosion had thrown him. His head was toward the entry. It did not look like he had struggled. His cap was on his head. His safety was hooked to his belt, also his oil can, but I did not see his lamp.

(Signed)

JAMES DUCA.

Coroner's jury verdict in the case of Stani Karboski, killed at Hartford, Arkansas, November 22, 1905.

Hartford, Arkansas, November 24, 1905.

We, the jury, find that Stani Karboski came to his death in the Central Coal and Coke Company's Mine No. 4, at Hartford, Arkansas, on November 22, 1905, by an explosion in said mine due to a defective shot igniting the dust and causing an explosion in which he was killed.

(Signed)

J. W. BORING,
W. B. KISSINGER,
A. W. KERSEY,
E. BOHANON,
H. RICE,
W. H. NULL,
C. ATKINS,
LOUIS MONEGO,
GEORGE HANKS,
JOHN POE,
DAVID LYNCH,
HENRY BROWN.

M. A. DODD, J. P., *Acting Coroner.*

Arthur Sublet, a miner working for the Western Coal and Mining Company, at Denning Mine No. 2, was killed by a fall of rock in Room No. 43.

Sublet was turning a room and had it driven in about 15 feet, and had no idea that the roof was loose or there was any danger in so narrow a place, but as it very often happens, there was a slip in the rocks which caused it to be cut off, falling without giving any warning, crushing him so that he died a few minutes after being taken out.

Joe Gasseo, working for the Mammoth Vein Coal Company, as a miner, was killed at their Mine No. 1, at Midland, March 13, 1906, in Room No. 2 off of the third west entry. Gasseo was on his road home after finishing his day's work, and when he came to Room No. 2, he had a friend working in this room, and went up to the face to see if he was going home. When he got to the face of the room he was warned by his friend to stay from under the loose top coal, that it was very loose and liable to fall at any time. He paid no heed to this warning and went under the coal, when it gave way, falling on him, crushing him to death.

I inspected the room next day and found a fall of coal that would weigh about a ton, and learned the above particulars.

On the evening of April 12, 1906, M. Vestrees, a pumper, working for the Central Coal and Coke Company, at Mine No. 26, at Bonanza, was killed by an explosion of gas. I inspected the mine the following day and found that there had been an explosion of gas. Vestrees entered the mine about 4:30 in the evening as pump man. His duty was to look after the pumps at night, which were located just at the bottom of the shaft.

The mine had been idle for some time, on account of a suspension, and there was no one in the mine at the time of the explosion but Vestrees.

From what I could learn it occurred about 5 o'clock, or about 30 minutes after he was lowered into the mine. After examining the bottom of the shaft and the main east entry it was very evident that there was a body of gas collected on the east side of the bottom of the shaft where Vestrees lit it, blowing him across the shaft to the west side, where he was found.

The company, thinking because the mine was idle it was not necessary to operate the fan which ventilated the mine, had shut it down, and the mine being just a new opening off, considerable gas with no ventilation to clear it out, caused it to back out of the working faces on to the bottom of the shaft, where it was ignited by Vestrees, later.

NAMES AND LOCATION OF MINES AND PRODUCTION OF COAL FOR THE YEAR ENDING JUNE 30, 1906.

NAME OF COMPANY.	Post Office	Number of Mines	Tons of Coal per Day's Worked	Number of Days Worked	Ventilated by	Miners Number of Men	Number of Dairy Men	Total of Employees	Kind of Opening	Pounds of Powder Used	Remarks
Sebastian County.											
Western Coal and Mining Company..	Jenny Lind.	No. 17	184,495	195	Fan.....	260	99	359	4,180	Shaft.....	
Western Coal and Mining Company..	Jenny Lind.	No. 18	97,098	190	Fan.....	150	60	210	2,582	Shaft.....	
Central Coal and Coke Company..	Huntington.	No. 12	63,653	137	Fan.....	175	48	123	2,283	Shaft.....	
Central Coal and Coke Company..	Huntington..	No. 3	139,983	152	Fan.....	166	64	230	4,634	Shaft.....	
Central Coal and Coke Company..	Hartford ..	No. 4	79,439	201	Fan.....	84	55	139	4,710	Slope.....	
Central Coal and Coke Company..	Bonanza ..	No. 20	51,541	178	Fan.....	44	121	1,464	1,464	Shaft.....	
Central Coal and Coke Company..	Bonanza ..	No. 26	39,822	209	Fan.....	67	40	107	1,436	Shaft.....	
Smokeless Fuel Company.....	Huntington ..	No. 1	30,273	185	Fan.....	35	10	45	1,500	Drift.....	
Bolen-Darnell Coal Company..	Huntington ..	No. 2	61,010	149	Fan.....	57	22	79	3,907	Slope.....	
Dallas Coal Company ..	Huntington ..	No. 4	42,713	142	Fan.....	65	35	100	1,500	Shaft.....	
Branner Coal Company ..	Montreal ..	No. 1	20,044	153	Fan.....	60	32	92	1,228	Shaft.....	
Mammoth Vein Coal Company ..	Midland ..	No. 1	63,018	151	Fan.....	80	35	115	1,750	Slope.....	
Denman Coal Company ..	Midland ..	No. 1	6,106	73	Fan.....	17	10	27	246	Shaft.....	
Patterson Coal and Mining Company.	Harford ..	No. 1	38,798	226	Fan.....	100	24	124	1,365	Slope.....	
Hoffman Coal Company ..	Harford ..	No. 1	23,000	152	Fan.....	32	14	46	720	Slope.....	
Heerokee Construction Company.	Fort Smith.	2,4,5,6	...	...	Fan.....	...	...	...	...	...	All Idle
Bolen-Darnell Coal Company..	Hartford ..	No. 6	19,214	167	Fan.....	25	10	35	898	Slope.....	
Fidelity Fuel Company ..	Greenwood ..	No. 1	68,326	180	Fan.....	80	35	115	850	Slope.....	
Greenwood Coal and Lumber Co.	Greenwood ..	No. 1	43,914	137	Fan.....	80	17	97	2,106	Slope.....	
Turnipseed Coal Company ..	Burns ..	No. 2	14,000	177	Fan.....	20	5	25	678	Slope.....	
Bates Coal Company ..	Excelsior ..	No. 1	3,000	110	Furnace ..	7	2	9	165	Shaft.....	
Kemp and Swift Coal Company ..	Excelsior ..	No. 1	3,000	108	Fan.....	8	2	10	159	Shaft.....	
Quinley Coal Company ..	Midland ..	No. 1	2,000	98	Furnace ..	5	2	7	155	Slope.....	
Total.....	.....	.....	1,096,159	3,571	.....	1,556	667	2,223	39,544	.....
Franklin County.											
Western Coal and Mining Company.	Demming ..	No. 1	44,112	171	Fan.....	85	35	120	1,728	Shaft.....	
Western Coal and Mining Company.	Demming ..	No. 2	163,990	195	Fan.....	250	90	340	6,011	Shaft.....	
Western Coal and Mining Company.	Demming ..	No. 3	105,050	194	Fan.....	140	35	175	4,221	Shaft.....	
Western Coal and Mining Company.	Demming ..	No. 5	24,297	186	Fan.....	45	15	60	1,034	Shaft.....	
Cleaton & Garrett Coal Company ..	Demming ..	No. 1	2,000	150	Furnace ..	7	2	9	198	Shaft.....	
Total.....	.....	.....	339,449	890	.....	527	177	704	13,192	.....

Johnson County.

Western Coal and Mining Company..	Coal Hill..	No. 4	80,637	184	Fan.....	40	160	3,699	Shaft.....
Hill, Hickney & Co. Coal Company..	Coal Hill..	No. 1	7,076	200	Furnace.....	5	13	340	Shaft.....
W. H. West Coal Company..	Coal Hill..	No. 1	2,720	120	Furnace.....	3	7	90	Shaft.....
W. H. West Coal Company..	Coal Hill..	No. 2	7,500	150	Fan.....	5	12	250	Shaft.....
Coal Hill..	No. 2				Fan.....	7	5	5	Shaft.....
Coal Hill..	No. 4				Furnace.....	3	2	11	Shaft.....
Coal Hill..	No. 1	8,512	185	185	Furnace.....	9	2	11	351
Coal Hill..	No. 1	6,971	201	201	Furnace.....	9	4	13	311
Denning..	Spadra..	No. 1	15,750	150	Fan.....	75	25	100	Shaft.....
Black Diamond Coal Co..	Spadra..	No. 2	2,500	25	Fan.....	20	10	10	Shaft.....
Consolidated Anthracite Coal Co..	Spadra..	No. 5	13,095	175	Fan.....	25	10	30	Shaft.....
Consolidated Anthracite Coal Co..	Spadra..	No. 1	26,978	182	Fan.....	74	13	38	750
Clark & Williams Coal Company..	Eureka Anthracite Coal Company..	No. 1	13,592	128	Fan.....	69	134	1,377	Shaft.....
Central Anthracite Coal Company..	Spadra..	No. 1	16,375	113	Fan.....	39	24	63	Shaft.....
Spadra Creek Coal Company..	Spadra..	No. 1	1,443	55	Fan.....	44	15	59	664
McWilliams & Ward Coal Company..	Spadra..	No. 1	15,000	180	Fan.....	77	3	10	75
Clarksville Anthracite Coal Company..	Clarksville..	No. 1	2,000	150	Fan.....	25	15	40	800
Arkansas Coal Company..	Spadra..	No. 1	3,500	225	Fan.....	7	4	11	175
Union Anthracite Coal Company..	Clarksville..	No. 1	4,317	195	Fan.....	22	22	22	500
Scranton Anthracite Coal Company..	Montana..	No. 1	229,477	2,718	.....	15	13	28	708
Total.....					.....	491	275	766	11,660
Pope County.									
Quita Anthracite Coal Company..	Russellville..	No. 1	15,671	185	Fan.....	40	20	60	1,252
Southern Anthracite Coal Company..	Russellville..	No. 1	12,981	149	Fan.....	47	22	69	Shaft.....
Russellville Anthracite Coal Company..	Russellville..	No. 2	2,816	165	Fan.....	10	11	21	Slope.....
Russellville Anthracite Coal Company..	Russellville..	No. 1	6,294	175	Fan.....	30	48	78	Shaft.....
Russellville Anthracite Coal Company..	Russellville..	No. 2	1,113	85	Furnace.....	8	4	12	Slope.....
Total.....					.....	38,875	759	135	240
Logan County.									
Union Coal Company..	Paris..	No. 1	13,830	192	Fan.....	32	10	42	1,183
Paris Semianthracite Coal Company..	Paris..	No. 1	4,545	97	Fan.....	17	4	21	Slope.....
Domestic Coal Company..	Paris..	No. 1	2,575	108	Furnace.....	16	6	22	282
Total.....					.....	20,950	397	65	150
Scott County.									
Witte Coal Company..	Coaldale..	No. 1	50,659	208	Fan.....	53	15	68	2,122
Not Heard From.									
Strip Pits and Smaller Mines..			100,000	100	.....	200	125	325	3,521
Grand Total.....			1,875,569	8,643	.....	3,027	1,384	4,411	74,017

TABLE NO. 2.

Number of tons of coal mined for each fatality.....	170,506
Number of tons of coal mined for each keg of powder used.....	25
Total number of miners worked in the State for the year ending June 30, 1906.....	8,027
Total day men worked in and around the mines for the year ending June 30, 1906.....	1,384
Total number of employees who got employment at the mines for the year ending June 30, 1906.....	4,411
Average number of days worked by each miner, for the year.....	154
Average daily tonnage for each miner, for the year.....	4 ² ₅ ⁴

Total Product in Tons of 2,000 Pounds for the Past Five Years.

Years.	Tons.	Years.	Tons.
1902	1,966,611	1905	1,971,144
1903	2,009,018	1906	1,875,569
1904	2,028,766		





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